

or changed to

UNCLASSIFIED

AUTHORITY

13mapr

Date:

MAR 24 1972

The RAND Corporation

1700 MAIN ST. • SANTA MONICA • CALIFORNIA

31 December 1958

L-24350

K-114

NRO Review Completed.

Mr. Harry Goode
Bendix Aviation Corporation
Ann Arbor, Michigan

Dear Harry:

Here at long last are some of the remarks and material which I promised to send you.

C
O
P
Y

First, let me deliver myself of a few general remarks about the meeting and our committee. I cannot escape the feeling that somehow BMD would like to use us without completely informing us as to the name of the game being played. This may be true of all committees; perhaps particularly so with this one because of the peculiar nature of the subject, and the various kinds of politics wrapped up with it. Further, I think it important to recognize and to state clearly and unequivocally both what this committee can do and what it can't do. Presumably our role is one of senior statesmen or godfathers blessing the project. One thing we can't do and should not allow ourselves to try to do in committee meeting is redesigning the satellite, inventing new satellite systems or doing things which require a hell of a lot more detailed, intensive and serious work that can ever summoned to bear in a committee meeting on the part of people acting only as committee members. This is in particular true and relevant in my case. Working as I do at RAND, where my daily work is concerned with matters not dissimilar to those being discussed in our committee, it would seem proper that any basic serious inventing or systems analysis that there is to be done on this subject, should be done under the RAND label instead of passed on to BMD through the committee label. As I am sure you realize, this has not prevented my speaking freely and in detail about matters with which I am thoroughly familiar, nor will it in the future. However, as a general caution and as a general damper on invention by committee, I think it should be clearly noted to the committee's sponsors. The remarks which follow this introduction are yours to cut up and use (or to disregard) as you see fit. I therefore, will not necessarily follow any particular logical sequence but will attempt to be self-contained remarks about the subject which we discussed.

On SS-G, I think we are quite correct in the stand that emerged during our meeting. SS-G -- The Infrared Warning System -- does not seem to be part of the 'classic' intelligence gathering satellite sequence. It is a system which is important in and of itself, should feed directly to NORAD and is the space stage equivalent of the DEW line. I make no brief at this point as to whether or not it is better than BMEWS or anything else but simply that it is sufficiently different from the rest of the 117-L project, and has no particular relationship to SS-I, the data handling system. This is not to take

GROUP-4

Downgraded at 3 year intervals;
Declassified after 12 years.

NOTICE: THIS MATERIAL CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, TITLE 18 U.S.C., SECTIONS 793 AND 794. THE TRANSMISSION OR REVELATION OF WHICH IN ANY MANNER TO AN UNAUTHORIZED PERSON IS

Mr. Harry Goode

11, 1958

L-24350

the entirely outward stand but whatever data is fed down from SS-I (or whatever it becomes when it is factored out from 117-L), should not feed into SS-I on a parallel channel. I make the point essentially obvious only SS-I is not the principle recipient or even the direct line to receive this data. Having said this much I think this is enough. There is no point on expanding on this remark at any further length.

We will reserve till later any discussion of the ARPA-letter and its implications. Most of the body of this letter will concern problems that are independent of the ARPA operation. You will remember that in some earlier meetings when we first heard a rather ambitious plan for SS-I, I made the point that SS-I as described to us was a mismatch to the rest of 117-L program. By mismatch here, I meant that SS-I was gearing itself to a regime of satellites which are not now in the cards and certainly not programmed under the 117-L structure. I further pointed out that SS-E of 117-L will deliver data with extremely poor timeliness characteristics (with average time delays of the order of a dozen hours or more) and this does not seem to be a very good match for the data-handling speeds called for under I. Now this was not meant to be directly critical of SS-I or its contractor -- RW -- but simply to point out an obvious and inescapable fact, which there is little point in denying. This point seems to be accepted by now, but has been given a slightly different twist by the BMD people and the RW people. The stand that seems to be taken now is that while it is true that SS-I is not a match for the 117-L program, this really means that the 117-L program needs jacking up to meet the performance capability of SS-I. The latter which is being portrayed as being 'truly closer to meeting to the real national intelligence objectives.' At this point a lot of material about 'surveillance' and 'dynamic threat forces', 'warning' and the like get introduced into the verbal traffic pattern. This point deserves considerable analysis and discussion.

I found the discussion and presentation of the requirements for surveillance as presented by RW extraordinarily weak, in many respects fallacious, and certainly insufficient to support the RW position, which is all out development of a 1965 capability to meet an as yet unspecified kind of satellite. The truth of the matter is that the 117-L program as now conceived -- (I'm talking here primarily about SS-E, the Visual System) -- was not designed, conceived or is being built to be a surveillance system. We must clearly recognize and repeat that the reason 117-L is now being touted as a surveillance system is because of the essential sense contained in the arguments for recoverability, and the consequent need to find a job and role for 117-L's video-talk-back feature. You will remember that Ken McLeish from Eastman Kodak (whom we all recognize as a very sharp type), told us at the Washington meeting that he had not previously thought much about the problem of timeliness in the satellite data business and that such thinking that he has done came as a direct result of the conversations that Mert Davies and I had with him in Rochester this past summer. The actual fact of the matter is that there is not now in hand a real study of what surveillance requirements ought to be, what timeliness of data is essential, or even how timeliness should be defined and used. For example, one may conceive of the timeliness function as consisting in large part of the time interval between time over target and time of delivery of the information on the ground. Clearly any flow diagram that can be made will recognize this as only one ingredient. Perhaps the timeliness function we want to define would include the time when a request for a look at a given spot is made to the

~~SECRET~~

Mr. Harry Goode

-3-

December 11, 1958

L-24350

time that information is on the ground and analyzed. The hinging of the requirement for a surveillance function so tightly onto the warning problem makes for a very weak argument and may result in jeopardizing the entire notion of surveillance satellites of this particular form. Remember here that I am not talking about the infrared warning system. I do not propose in this letter or in committee to develop at the great and necessary length required all the notions and all the functions of the surveillance satellite system. I insist however, that there are numerous such functions and numerous such examples can be constructed. Perhaps we will do that here at sometime in the future.

A sensible program and an argument for the surveillance function will not result in the kind of polarized arguments we heard at the meeting. I say again, that tying the argument for a surveillance satellite too tightly and uniquely to the warning problem may be sexy, but very dangerous, because just as soon as some bright organization or group who really understands this problem points out that this satellite system will not solve the warning problem, cancellation might be the next order of the day, and this I submit would be disastrous.

At previous meetings of our committee we indulged in fairly good discussions; of mapping and 117-L as a mapping system. You will also remember that instead of one or two paragraphs I promised to send you a part of a longer document which I have prepared. This material is attached. Attached also, is a section on Utility of Very Large Payloads for Reconnaissance. It is out of the consideration of this particular section that we can perhaps begin to formulate suitable notions for surveillance satellites.

Another subject that deserves some emphasis in our report has to do with the requirements for R & D on new sensors, the possible use of organizations not now involved (in particular the Aerial of Reconnaissance Laboratory at Wright Field. It is clear that the 117-L program (as at present managed, funded, and working) is traveling the road of operational developments. Nowhere in the program as far as we can see, is there any separate parallel research and development going on. This may be because of some fussy programming or because of fund limitations. Whatever the reason this kind of behavior gives rise to confusion such as we have seen, wherein the clear distinction between something which is an R & D pipe-dream gets programmed as part of an operational development.

The full impact of recoverability and the consequent requirement for reorientation of the remainder of the 117-L toward surveillance has not been faced, by RMD or the contractors. Instead, as I think I have indicated some paragraphs earlier, they have started high-blower use of the word surveillance without any apparent reorientation of the program to demonstrate reconsideration of the function. Of course, this (typical) behavior by contractors is understandable.

I must interject a thought here, which may escape me if I don't get it down at this point. In all the activity surrounding General Shriever's letter, the new and expanded role of our committee, the politics surrounding 117-L -- I seem to find strangely absent any mention of the Killian group or the Air Forces Scientific Advisory Board Panel on Reconnaissance. One of two things must be true. Either they are not involved (and I find this strange beyond all understanding) or if they are involved our committee has not been informed. Either alternative strikes me as being very odd and as further demonstration of this 'what's the name of the ~~stuff~~ stuff going on.

Mr. Harry Goode

December 31, 1958

E-24550

I turn very briefly to a few remarks about the ANPA letter. If I said what I really think I doubt that I could get this letter mailed. In short, simple and unequivocal summary, I think the ANPA letter demonstrated an amazing technical naivete, which, coupled with an apparent large dose of authority makes for very upsetting events. Apart from numerous and inexplicable internal inconsistencies within the letter, it seems to have little external relation with the real world R & D, or requirements for intelligence and reconnaissance. Of the thirty or forth or more recommendations, I think our committee could agree with only one -- that having to do with the separation of SS-G from 117-L.

In conclusion Harry, I have left out many things which I would not like to put in writing but which I trust you will remember I said and feel. I hope these notes will help you in drafting your report.

Sincerely,

Amos H. Katz
Electronics Department

AHK:ac

Encl: as noted (2)

SECRET